NEW-YORK FARMER
AND
Horticultural Repository.

VOL. 2.] NEW-YORK FEBRUARY, 1829. [NO. 2.

ART. 18.—*The practice of recording the transactions in tillage, by Farmers and Gardeners, is of great importance and utility.* By the EDITOR.

Among the duties devolving on every one, arising from the social compact of the human family, of great importance but lightly considered, is the dissemination, and if possible, the discovery of useful information. It requires but little thought to perceive that mankind advance in useful knowledge by the accumulation of facts. These are to be obtained by experiment and observation—means that are within the power of every individual in the enjoyment of the five senses. In past and less enlightened days, owing to the want of the facilities of publication, there was not that stimulus to experiment and observation, nor that test of public scrutiny which is now sifting and exploding theories and practices, that are founded on immemorial custom or false principles. The cheapness of writing paper compared with the parchment of olden times, and the enlarged field of observation which modern science has laid open, require in the generality of the present tillers of the soil, a *habit* in recording events and the results of experiments, which was only an occasional practice of a few philosophers in past ages. Although modern discoveries have thrown much light on every branch of agricultural pursuits, yet for the want of this general habit, the progress of useful knowledge is much retarded. Many principles of science have been discovered and are correctly taught from books, but on account of the deficiency of facts from those whose occupations lead them to be conversant with the operations of nature, their application is limited, and consequently their benefits restricted. If farmers were more deeply impressed, that improvements in tillage depended in a very great degree on a general scientific acquaintance with the laws of nature, they would make more frequent observations and experiments. They should recollect that if great praise is bestowed on him, who, by his industry, "makes two blades of grass grow where one grew before," much greater is due to him, who, by the accumulation of facts, is enabled to draw those general inferences that will facilitate and make more effective the operations of the husbandman.

The mind cannot be easily disciplined to habitual observation without the frequent practice of recording. The multiplicity of the objects of vision, the ever varied and continual sounds that strike upon the ear, the different sensations arising from the touch, the taste and the smell, operating on the mind in rapid succession, are productive of fleeting thoughts. Hence we can account for the little improvements made by a great portion of mankind, placed all their lives in favorable situations for observation—and hence also we can see the propriety of adopting some plan that will habitually discipline the mind to retain some of these thoughts, to reflect on their prototypes, & record what appears new or striking. This practice will make the mind alert, and almost every occurrence will lead to an association of ideas, and to general inferences both pleasing and useful. It is this habit of observation and reflection, to which those men denominated "self-taught," owe their preeminence and popularity.

In keeping a kalender or diary, it is not supposed every farmer will adopt exactly the same plan—one will collect and record every fact calculated to throw light on the production and application of manures—another will note all the phenomena relating to the germination of seed, and the growth and habits of plants—one will study the effects of different treatment on the constitution of horses, and the nutritive qualities of different kinds of feed—another will keep a full account of the management and the crops of every field of the farm. These divisions may comprehend an almost endless number of subjects.—Among them may be enumerated, the effects of fermentation, and of drenching rains, on manures—the kinds of soils best adapted for fermented, and those for unfermented manures—the changes which seed undergo in germination, and the causes that produce those changes—the degree of warmth and moisture necessary for the healthy growth of vegetables—the language or instinct, and the generating powers of vegetables—the plants that derive the most and those that derive the least nourishment from the atmosphere—the state, the kind, and the quality of food best calculated to accomplish the desired objects in live stock. These, together with the origin and habits of insects, and the means for preventing the depredations of those that are noxious, open a field for the observation of farmers as wide as it is attracting and useful. Every farmer too, should know the geological formation of his farm and the chemical properties of the constituents of the soil.

The practice we recommend is attended with numerous benefits—the perception quickened—the penetration deeper—the mind enriched—the memory strengthened—the solidity and weight of character increased—virtuous habits established, and the pubgood promoted.

ART. 19.—*General Directions for the management of a Garden.—An extract from the Young Gardener's Assistant, now in press.* By Thomas Bridgeman, Gardener.

Before I commence on the Catalogue, it may be necessary for me to direct the reader's attention to some important matters essential to the good management of the garden.

The mode of laying out the ground is a matter of taste, and may be left to the gardener himself; the form being a thing of trifling importance in the production of useful vegetables, or whether the ground be laid out in beds of four or ten feet wide, provided it be well worked, and the garden kept neat and free from weeds.

Those who have not a garden already formed, should however fix on a level spot where the soil is deep; but as we have not always a choice, I would recommend the reader to that which is within the reach and ought to be the object of every man, namely to make the most of what he has.

Previous to entering on the work of the garden, the gardener should lay down rules for his future government. In order to this he should provide himself with a blank book. In this book he should first lay out a plan of his garden, allotting a place for all the different kinds of vegetables he intends to cultivate. As he proceeds in the business of planting his grounds, if he were to keep an account of every thing he does relative to his garden, he will soon obtain some knowledge of the art. This the writer has done for the last nine years, and he flatters himself that a publication of the results of his practice, will be interesting and useful to his readers.

One great article to be attended to is to have a supply of good old manure and other composts ready to incorporate with the earth; also a portion of ashes, soot, tobacco dust and lime, for the purpose of sowing over seed beds in dry weather; this will tend in a great measure to destroy insects which sometimes cut off the young plants as fast as they come up.

If the ground cannot be all manured as it should be, it is of primary importance that those vegetables be provided for which most need manure. A perusal of the catalogue will enable the young gardener to judge of the kinds of garden products which require most. Lest I should not have been explicit enough in this particular, I would inform him that good rich manure is indispensably necessary for the production of brocoli, cauliflower, cabbage, lettuce, spinage, onions, radishes and salads in general.

In the event of a scanty supply of manure, those kinds of vegetables which are raised in hills or drills, may be provided for by disposing of the manure immediately under the seeds or plants.

The next important matter is to have the ground in suitable condition to receive the seed. I would wish it to be understood, that I am an advocate for early sowing and planting even at the risk of loosing a little seed, provided the ground be fit to receive it. A light sandy soil will be benefitted if worked when moist, as such treatment will have a tendency to make it more compact; on the contrary, if a clay soil be worked when too wet, it kneads like dough, and never fails to bind when drought follows, and this not only prevents the seeds from rising, but injures the plants materially in their subsequent growth, by its becoming impervious to the moderate rains, dews, air and influence of the sun, all which are necessary to the promotion of vegetation.

Some gardeners, as well as some writers, recommend certain fixed days for sowing and planting particular kinds of seeds; I think it necessary to guard my readers from being misled. The failure of crops may be often attributed to the observance of certain days for sowing. If some kinds of seeds be sown when the ground is wet and cold, they will become chilled in the ground and seldom vegetate. If they be sown in very dry weather, the germinative parts of the seed may become injured by the burning rays of the sun, or the young plants may get devoured by insects as fast as they come up. To obviate these difficulties, I have generally allowed a week or ten days for the sowing of the seeds, intending the medium as the proper time for the vicinity of N. York. With this clearly borne in mind, the reader, who will know the difference in the degrees of heat and cold in the different parts of the country, will know how to apply these instructions accordingly.

Much depends on the manures used on particular kinds of soils. The great art of improving sandy and clayey soils, is to give the former such dressings of clay, cow dung and other kinds of manure, as will have a tendency to bind and make them more compact, and consequently more retentive of moisture; and to the latter coats of horse dung, ashes, sand, and such other composts as may tend to separate the particles and open the pores of the clay so as to cause it to approach as near as possible to a loam.

The nearer the ground approaches to a sandy soil, the less retentive will it be of moisture; the more to a clayey the longer will it retain it; and the finer the particles of which the clay is composed, the more tenacious will it be of water, and consequently be lon-

ger in drying, and the harder when dry; but earth of a consistence that will hold water the longest, *without becoming hard when dry*, is that of all others, the best adapted for raising the generality of plants in the greatest perfection. This last described soil is called loam, and is a medium earth, between the extremes of clay and sand.

I have in most cases recommended drills to be made at certain depths for the different kinds of seeds, and when I have stated that the drills should be two inches deep, it is intended that the seeds should be covered only one inch, which they will be when planted in these drills and covered—and so in proportion for any other depth required. This may serve as a guide to the young gardener, but circumstances alter cases; if for instance, some particular crops should fail, this would render it necessary if the season be far advanced to risk a further planting of seeds, even if the weather be hot and the ground dry; if these be planted a little deeper, they may escape the violent heat of the sun, and in the event of a shower, the ground would become sufficiently moist to bring them up; whereas it sometimes happens that seed sown after a shower, do not vegetate until after the season is too far advanced to bring the crop to perfection.

The work of drilling may be performed in various ways; in some cases a plough is used, in others a small hoe or a dibble drawn along the edge of a board or line; it is of little consequence which way the work is done, if it be well done. While I leave the gardener to make his own choice of tools, I would suggest that he be provided with two or three drilling machines; these every handy man may make for himself; they should be in the form of a garden rake, with a stout heavy back and five teeth two inches broad, and tapered so as to enter the ground and leave drills two inches deep. If one be made with the teeth eight inches apart, another twelve and another fourteen, they will be useful for making drills for various seeds, and drills thus made, serve instead of straining a line for every row in planting cabbage, lettuce, leeks, &c.—the line being strained at one edge of the bed, and the drilling machine drawn strait by the line makes five drills at once. If they are straight they may be kept so, by keeping one drill open for the outside tooth to work in until the ground be all drilled.

Gardeners practice different methods of covering up seeds, some do it with a hoe, others with a rake or harrow; some draw a portion of the earth to the side of the bed, and after sowing the seeds return it regularly over the bed; in some particular cases a sieve is used, in others a roller. Rolling or treading in seeds is necessary in dry seasons, but it should never be done when the ground is wet.

There is nothing that protects young crops of turnips, cabbage and other small plants from the depredation of the fly, so well as rolling; for when the surface is rendered completely smooth, these insects are deprived of the harbour they would otherwise have under the clods and small lumps of earth. This method will be found more effectual than soaking the seed in any preparation, or dusting the plants with any composition whatever; but as the roller must only be used previous to, or at the time of sowing the seed, and not even then if the ground be wet, it is necessary that the gardener should have a hogshead always at hand in dry weather, containing infusions made of waste tobacco, lime, soot, cow dung, elder, burdock leaves, &c. A portion of these ingredients, or any other preparation that is pernicious or poisonous to insects, without injuring the plants, thrown into a hogshead kept filled up with water, if used moderately over beds of young plants in dry weather, would in almost every case insure a successful crop.

If it be necessary at any time to sow seeds in dry weather, it is recommended to soak the seed in water mixed with sulphur. This practice with attentive watering, will cause the seed to vegetate speedily.

If it should be requisite to transplant any thing when the ground is dry, the transplanting should be always done as soon as the earth is fresh turned over, and the roots of the plants should be steeped in mud made of rich compost, before they are set out.

I have in most cases recommended seeds to be sown in drills drawn from 8 to 12 inches apart, in preference to sowing broadcast, because the weeds can be more easily destroyed by means of a small hoe; and which properly used, greatly promotes the growth of young plants. T. BRIDGEMAN.

Bowery Road, Feb. 1829.

ART. 20.—*Natural Formation of Soil.*

Nothing can be more truly beautiful in itself or more deeply interesting to a reflecting mind, than the process by which nature constantly produces an accession of soil and accumulation of vegetable matter to render it fertile. The process is varied so as to be exactly adapted to overcome the obstacles which the circumstances of each particular district present; but, although the means employed are infinitely various, the final result is always the same. When the surface of a rock, for instance, becomes first exposed to the atmosphere, it is at once attacked by agents wich operate mechanically and chemically.—Light calls into activity the latent heat; the pores become, by that means, sufficiently enlarged to admit particles of moisture, which gradually abrade the surface and produce inequalities; upon these

equalities, the seeds of lichens are deposited by the atmosphere; these fore-runners of vegetation take root, and the fibres by which some sorts of these diminutive plants adhere to the rock, concoct a vegetable acid peculiarly adapted to corrode the substance with which it comes in contact, and increase the inequalities which heat and moisture had already formed. These diminutive plants decay and perish; when decomposed, they form a vegetable bed, united to the production of larger plants; or when the surface of the rocks happens to present clefts or natural crevices, they fall into them; and there mingling with fine particles of sand, conveyed thither by the atmosphere, or crumbled by the action of the air from the internal surfaces of the crevices themselves, they form fertile mould. Nature having advanced thus far in her preparations, makes another forward step; she sows the soil which has been created by the decomposition of vegetable matter with some of the more perfect plants, which it has now become capable of sustaining. These continue to be produced and decomposed until a soil has been prepared of sufficient depth and richness to bear plants of still higher quality and larger dimensions. The process of nature acquires accelerated force as it advances towards its consummation.

When a sufficient depth of soil has been formed to produce ferns, for instance, these annually decay and die; their decomposed materials gradually form little conical heaps of vegetable mould round on the spot on which each plant grew. When this has gone on for a period of sufficient length to spread these cones over a given surface, nature takes another stride; she sows furze, thorns and briars, which thrive luxuriantly, and by annually shedding their leaves, contributes, in the end, to add greatly to both the depth and fertility of the mould. This species constitutes in truth, the means which nature principally uses in preparing a bed for the growth of the more valuable trees. It is well known that these are the plants which make their appearance in fallows, or in woods which have been recently cut down. Into the centre of a tuft of brambles is accidently carried the seed of the majestic oak. Meeting with a congenial soil, it soon vegetates; it is carefully and effectually cherished and protected by its prickly defence against all the injuries from the bite of the animals which roam over the waste. The larger trees having reached a height and size which render shelter unnecessary, destroy their early nurses and protectors, by robbing them of their light and air, indispensable for their well-being. The thorny plants then retire to the out-skirts of the forest, where, in the enjoyment of abundant supply of light and sun, they continue gradually to extend the empire of their superiors; and make encroachments upon the plain, until the whole district becomes at length covered with magnificent trees. The roots of the largest trees penetrate the soil in all directions; they even find their way into the crevices of the rocks, filled as these are already with decomposed vegetable matter; here they swell and contract, as the heat and moisture increase or diminish. They act like true lovers, until they gradually pulverize the earthy materials which they have been able to penetrate.

While the roots are thus busy under ground, boring, undermining, cleaving, and crumbling every thing that impedes their progress, the branches and leaves are equally indefatigable overhead. They arrest the volatile particles of vegetable food which float in the atmosphere. Thus fed and sustained, each tree not only increases annually in size, but produces and deposits a crop of fruit and leaves. The fruit becomes the food of animals, or is carried into a spot where it can produce a plant; the leaves fall around the tree, where they become gradually decomposed, and in the lapse of ages make a vast addition to the depth of the vegetable mould; and whilst the decompositions of vegetables make a gradual addition to the depth of the cultivatable soil, another cause, equally constant in operation, continues to increase its fertility; the produce of the minutest plant serves to subsist myriads of insects; after a brief existence, these perish and decay; the decomposed particles greatly fertilize the vegetable matter with which they happen to mingle. The period at length arrives when the timber, having reached its highest measure of growth and perfection, may be cut down, in order that the husbandman may enter upon the inheritance prepared for him by the hand of the all-wise and all-benevolent Author of his existence. Such is the system which they that have eyes to see may see. Plants which appear worthless in themselves—those lichens, mosses, heaths, ferns, furze, briars and brooms, in which *economists*, forsooth, perceive only the symbols of eternal barrenness—are so many instruments employed by Perfect Wisdom in fertilizing new districts for the occupation of future generations of mankind.—*Quarterly Review.*

ART. 21.—*Ohio Hemp and Flax*—[From the Ohio State Journal.)

As we believe that there are no articles of produce, the cultivation of which is of greater importance to the state, or calculated to afford the agriculturists a surer profit, than Hemp and Flax, for the raising of which our soil is particularly well adapted, the attention of the reader is respectfully invited to the following statement.

It is contemplated to purchase about 500 acres of

land near Sandusky City, Port Clinton or Cleaveland, and to erect at navigation depths the buildings hereinafter designated. It is also contemplated that the main establishment for the culture of the Hemp, should be near Columbus or the canal, and should be superintended by Russians, whose experience will enable the company effectually to rival the Russia Hemp, and to secure the patronage of the Navy, and of our shipping merchants. At this point, works for the extensive manufacture of bale rope, &c. will be erected. It is further contemplated that the Flax establishment shall be as near Cincinnati as practicable, and that at this point, sail cloth shall be manufactured. The advantages to be derived to the stockholders in such a company, will probably be made apparent, by an exhibit of the manner in which the sum of twenty thousand dollars may be appropriated at the Lake shore establishment, and of the profits to result, viz:

1st. A stone pier to be sunk at navigation depth, of sufficient extent to support the necessary buildings and have a cartway around them, say 120 ft. by 35, would cost, if erected in Sandusky Bay, where the privilege can be obtained as a donation to the company, not more than	$2,000
2d. A store building to be erected on said pier, of 25 feet by 80, and of sufficient height to accommodate an engine, with a place above for the machinery, and the remainder of the lower story to be used for storage and other purposes, cost	3,200
3d. A steam engine of 40 horse power, on the high pressure principle, to be purchased, cost	5,000
4th. Two pair of 57 1-2 feet burr stone, for flouring, with flouring apparatus and adaptation to the engine, to be purchased at	2,000
5th. A double carding machine and adaptation, cost	1,000
6th. A fulling mill and dye-house, to be erected, cost	1,000
7th. Five hundred acres of prairie land to be purchased at	1,500
8th. Expense of enclosing such land in one field,	500
9th. Expense of breaking up the same and preparing it,	1,500
10th. Purchase of two hemp dressers & breakers, on Hines' plan, one to work for the company, and the other for those who may enter into the culture of Hemp on individual account,	800
Total,	$18,500

Leaving a balance of 1,500 dollars to meet contingencies.

By minute estimates, it is believed that these expenditures and preparations made, the nett profits of the two flouring mills, of the carding machine and cloth dressing establishment, together with the custom hemp dresser, (three can be driven by the same power) will meet the current expenses of the whole; leaving the entire proceeds of the five hundred acres of hemp to the company as profit; the matter will then stand thus:

Each acre will average at least 400 lbs. of hemp; (Mr. E. Cooke of Sandusky, has averaged 1200 lbs) of course the 500 acres will yield 100 tons of hemp, which put in the New-York market at $150, instead of 280, the present price of Russia Hemp, will realize in cash $15,000 on a capital of 20,000. The transportations from Lake shore to New-York, will cost about $13 50 per ton. Deducting for the contingent expense of the culture of the Hemp, transportation and other incidentals, not herein brought into view, the sum of $5000, and the annual profit will then be 10,000 dollars. Much, however, will depend upon energy and economy in the management of the concern. Each branch must have an experienced superintendent. It might be so arranged that an intelligent and trusty person might act as Engineer and clerk at the Lake shore establishment.—Among the facilities of rotting, (as it requires only from five to eight days immersion) a bason can be formed in the rear of the machine house, by running a wooden wharf from each corner to the shore, (and they would be necessary at all events) and by means of ropes, the hemp might be raised, when sufficiently steeped. Instead of depending upon the weather for drying, a drying house might, by extending the plan, be constructed directly over the engine, so that no additional fuel would be required.

ART. 22.—*Method of raising Mushrooms without spawn, by which the table may be plentifully supplied every day in the year.* By DANIEL PHELAN, Gardener. [To the Editor of the N. Y. Farmer.]

SIR—A desire for the progress of Horticulture in this most favourable part of the Union, inclines me to hand you a few directions on the cultivation of Mushrooms.

Mushrooms are wanted in every family and in most places where there is any thing of a garden, there should be beds for raising them. The getting of good spawn is frequently attended with great difficulty, and when it is obtained, if the bed is not in proper order to receive it, there is a very great disappointment, which often happens to those who are

well acquainted with the different methods which are now in practice for propagating them.

There is no plant that is raised by art, where nature has given so many hints to faciliate its propagation, as the mushroom, and yet it is still in its infancy. There is not in common practice that I know of, any certain method to raise them so as seldom to fail of producing a good crop. If the beginning of summer is warm and dry, and afterwards there fall kindly warm showers, the fields produce plenty of them; whereas, if the beginning of summer is cold, wet and afterwards becomes warm and dry, there are few or none. Hot beds, where cucumbers have been planted early in frames and spawned when the bed is in regular heat, often produce a great quantity of mushrooms.

The proper times for making the bed are as follows: To have them in winter, the beds should be made the beginning of July; for a spring crop, the beginning of December; and to have plenty all the summer, there should be another bed made the beginning of March. These three beds will produce them every month in the year.

Before I proceed to give directions for making the beds, it will be proper to say something concerning suitable places for them. Those who are fond of mushrooms in winter, may be certain of having them in great plenty, if they will be at a trifling expence of building a shed against a south wall or fence, with a pit 3 feet deep, 4 feet broad, the length according to the quantity that is wanted; twenty to thirty feet long will produce sufficient for a large family.

There must be a flue all round the pit two feet deep and eight inches wide, and a vacancy of an inch on the inside next to the bed, and left open at the top. The vacuum or vacancy all round, prevents the heat from drying the sides of the bed. If the flue had no vacuum, the heat would destroy all production within a foot round at least; and when the bed is covered with straw and litter, as it must be all winter, to keep off the frost and cold air, the straw should be laid all over the flue and vacuum which will cause a gentle heat over the top of the bed, and greatly encourage the growth of the mushroom. There will be no danger of the straw taking fire as little heat will be sufficient to keep the mushrooms grown. In winter they will grow in dry cellars and produce a good crop: they will also thrive extremely well at the end of a stable where horses are kept, in a shed facing to the south, from the beginning of April to the end of September; but will produce nothing in winter, as the air is too cold for them, although the bed is covered ever so well with straw and litter. The materials and method of making the bed either for winter or summer, in the above mentioned places, are made in the same way. I shall only give directions for making that in the flued pit for winter use. In the middle of June provide some fresh litter from the stable; a bed thirty feet long and four feet broad, will take twelve or fourteen cart-loads; throw it up in a heap under cover, for it must not get wet, and let it remain for seven or ten days, by which time it will have a greater heat, and it is then fit for use.—Get four loads of fresh tanners' bark; it should be laid in a heap, under cover, for twelve days at least as bark is longer in heating than other dung. When it has been heaped six days it should be turned over that the outside may be in the same condition as the middle, for the outside of the bark never heats when it lays in an open heap. When it has just come to a moderate heat after turning, it is in good order for the bed: at the same time there should be saved from the stables the horses' droppings, which should be kept as whole, dry, and clean from straw as possible. They should be laid under cover and spread two inches thick; the place where they are laid should be airy and dry.

To make the bed, put a layer of the dung that was shaken up, two feet thick over the bed: it must be made equal and firm—not walk on it, however; then a layer of bark four inches; over this a layer of the same dung one foot thick; on this a layer of bark two inches thick; and on this six inches of the shortest of the dung that was thrown up.

When the bed has been made about fifteen days it will have a gentle heat, and then lay on two inches more of bark, and on this a layer of horse droppings four inches thick; they should be taken up carefully and as little broken as possible, and on the top of the dropping an inch of the shortest of the dung from the heap that was shaken up; this finishes the bed.—The bed should remain so for five or seven weeks, by which time it will have a moderate heat if all has succeeded as it should, and will be fit to lay on mould; it should be just milk warm, the mould to be laid on three and a half inches thick but must have no water until on examination of the mould, there appear little white strings amongst it, which will be in about four weeks. It must have a little water once a week, and if made milk warm the better. In about three or four weeks after the white strings appear, the mushrooms will begin to come. The bed should then be refreshed with water often, but not much at a time, for if there is much given at once it will kill all the mushrooms that are above ground, and greatly damage the bed. A bed thus made, will continue to bear very plentifully for eight months and sometimes a year, and produce much finer and larger mushrooms than any of those that are produced in the field; the mould proper to lay on the bed is two parts of very rotten dung sifted, two parts of fine light loam, and all well mixed together.

Before concluding these remarks, I cannot but express my surprise, that the inhabitants of this country should so lightly appreciate this delicious plant. The sauce denominated Ketchup, is celebated for its excellence. When fried and properly seasoned, the mushroom ranks among the first luxuries of the vegetable kingdom.

The mushroom, on appearing above ground, is of a pure white color, in the shape of a round button, which quickly assumes the form of a parachute or an umbrella; the underside is composed of radiated gills of a beautiful pale red, which assume a black hue when the plant becomes too old for use. The edible mushroom is easily distinguished from the toadstool, which is of a pale yellowish sickly color.

I am, sir, your most ob't. servant,

DANL. PHELAN, Gardener.

New-York, Jan. 23d, 1829.

ART. 23.—*Report of the Committee on agriculture to which was referred the memorial of Jacob B. Clarke, for the grant of the public land at Greenbush, in the State of New-York, to aid him in the rearing of the Mulberry tree, preparatory to the culture of silk.*

The Committee report, that they have considered the subject of the said memorial, and have endeavored to ascertain its importance to the nation, in reference to its agriculture.

The Committee need not remind the house that the depression and embarrassments of this great primary interest have produced deep and almost universal complaint, and have been the occasion, not less of regret, than of anxious solicitude to provide the means of relief. The depression and embarrassments still continue. While the productive powers of the country have increased with unparralled rapidity, its foreign and accustomed markets have been as rapidly diminishing. Supply has exceeded demand. The ordinary productions of agriculture have usually been superabundant: but the prices they have commanded have not repaid to labor and capital their just reward.

It may be useful to illustrate this point by a brief reference to the exportations of bread stuffs of all sorts from the United States for the last ten years. These bread stuffs, it is well known were, and still are the staple productions of the agriculture of the Northern and Middle States, and furnished the medium of their commerce, and the means of purchase of foreign manufactures. The farmers of these States have been conscious of intense suffering and privation. They have felt their substance dwindling in their possession, and their farms virtually sliding from under them.—The causes were remote and invisable, and perhaps have not been duly weighed, nor fully appreciated.—They cannot be too often reminded of these causes, and pointed to the remedy, until the latter shall be adopted, and the former removed. The following statement shows the annual value of bread stuffs exported from the United States for the last eleven years.

In 1817,	$20,374,000	In 1823,	$6,263,231
1818,	15,550,817	1824,	6,894,641
1819,	18,259,121	1825,	5,600,223
1820,	6,620,408	1826,	5,540,863
1821,	5,184,999	1827,	5,803,230
1822,	6,627,510		

This table shows a rapid diminution of the exports of this important staple, of about 15 millions, or three fourths of the whole, in about five years, reducing it to the minimum point, at which it has remained, with little variation, ever since. The cause of this immense change is the loss of the foreign market, not the exhaustion of the fertility of our soil, or the diminished power of our country. On the contrary, that power has grown with its rapidly increasing population. In the last ten years three millions have probably been added to our numbers, and our powers of production have been proportionately increased.

Had the foreign demand continued, our exportation of bread stuffs would have been swollen to the astonishing amount of 26 millions, instead of having been reduced to less than six. It would have been impossible to calculate the effects of this change, had not the nation experienced them. Here is a withdrawal of an accustomed market to the amount of twenty millions in the single article of bread stuffs; and embracing the other ordinary productions of agriculture, it cannot be at less than 40 millions—To this amount does the power of the agriculture of the country exceed its productions. To this amount it may fairly be estimated, it has lost a market it once enjoyed. To this extent have our commercial foreign relations been changed within the last ten years, by the change of the condition and policy of foreign nations, producing an immense change in our condition, and imperiously demanding a corresponding change in our policy. These changes sufficiently account for the embarrassments and depression of agriculture; and their consequences have been extensively and grievously ruinous. The depreciation of the produce of the soil, and the rapid diminution of the quantity, have greatly reduced the value of the soil itself, and sunk to half its former amount this great capital of the nation. If there be a remedy within the competency of the Government, both duty and policy demand its provision and application. That remedy is most obviously an enlarged demand for the products of agriculture, causing as a necessary consequence, both an increase of quantity and price. But this re-

medy can be applied only by diversifying the pursuits of the farmer, and adapting the fruits of his soil and labor to the consumption of the country, and substituting the domestic productions to the foreign supply. The condition and policy of foreign nations forbid the hope of relief from abroad, and compel us to look, as the last resort, to the home market. This consideration, together with the nature of the subject referred to the committee, has led them to inquire into the value of this market in the article of silk, and the fitness of the soil and climate to produce it. This inquiry has elicited facts, and results which they have thought deeply interesting to the nation, and which they now submit to the consideration of the house.

On referring to the tabular statistical views of Messrs. Watterson and Van Zandt, they have ascertained the value of silks imported into the U. States for the last seven years to be as follows.

In 1821,	$4,486,924	In 1825,	$10,261,527
1822,	6,840,928	1826,	8,104,837
1823,	6,713,771	1827,	6,545,245
1824,	7,203,334		

Amounting, in the aggregate, to the enormous sum of $50,156,566; making an average annual importation of 7,165,223 dollars worth of silk. But of this amount, was re-exported 12,893,858 dollars, leaving for the home market 37,262,708 dollars; and showing an annual average consumption of silk of 5,323,244 dollars.

But this statement is far from exhibiting to the apprehension of this country the true amount of these importations. This is the amount of the invoice prices; the prices of the goods at the place whence imported; the prices not to sell by, but to pay duties by; the price to the foreign manufacturer perhaps, but not to the American consumer. The retail market value, which is the price the purchaser pays, in labor, in produce, or in dollars and cents, must include, 1st. the duty, from 20 to 25 per cent.; 2d. the charges and profits of importation, at least 10 per cent. more; and 3d. the ordinary retail profit, 20 per cent. on the whole cost. This per centage swells the the value of the importations of silk, for the last seven years, to the formidable amount of 84,764,205 dollars; averaging annually, 12,109,172 dollars. By the same standard of value—the value at which they have been sold and purchased, the amount actually consumed in the country, for the last seven years, is 62,880,819 dollars; showing an annual consumption of 8,982,974 dollars. To purchase these silks, would require 8,982,974 bushels of wheat, at a dollar per bushel; to produce them, and manufacture them, would enrich our farmers and manufacturers, just as much as the production, and sale in a foreign market, of so much wheat or cotton.—The home consumption that requires so much silk to supply it, furnishes just as valuable a market for the agriculture of the country as a foreign market for so much wheat or cotton, which is in fact more than double the value of the foreign market for all the flour and wheat we export; and the domestic supply of the former would not diminish by one bushel our export to the latter.

If the value of the raw silk bear the same proportion to the manufacturer as wool, (and it is presumed not to be less,) it would be worth annually, 4,491,487 dollars; the substance of the manufacturers may be fairly estimated to compose the half of the residue, viz: 2,245,743 1-2 dollars: 6,737,230 1-2 dollars, the amount of both, constitutes the annual value of this market to the agriculture of the United States. So much is clearly within the reach of the people of this Union. So much have they in their power to superadd to their agriculture. This is the value of their own market in the simple article of silk; a market, which is their absolute unconditional right, which they can easily command, and as easily supply. This market Britain and France deem of the annual value of millions to them. Its possession and supply would add so much to the produce and wealth of the nation, and contribute immensely to the relief of its agriculture.

Your committee feel it their duty to press upon the house, and to present to the nation, every consideration calculated to arrest the attention, and to awaken it to a just appreciation of the importance of this object of national industry. Could a permanent market for an additional million of barrels of flour (more than the present annual export of the article) be suddenly opened to the merchants of the U. States, with what eagerness would they seek it, and how speedily would they supply it! Should it be unlawfully obstructed with what importunity would government be urged to remove the embarrassments! The Army and Navy of the Union would be put in requisition to defend it from aggression, and its treasure would be freely and liberally expended to keep clear the channel of so important a branch of its commerce. But need the American farmer be reminded that a hundred dollars worth of silk is as valuable as the same amount of flour or wheat? and if he can produce this value of silk with vastly less labor, from less space and with much less risk of accident or failure, with what avidity should he engage in its production? Here is a domestic market for silk of nearly double the value of all the foreign markets for all his bread stuffs, exposed to no interruption, liable to no accident, constantly increasing with the growth of the nation, and perfectly within his power. He has but to will and suit his action to his volition, to insure but its possession and supply. One acre of full grown mulberry trees, it is estimated, will produce two hundred dollars worth of silk; but it would require ten acres of the first rate land to produce the same value

of wheat. Neither is there any comparison in the quantity and quality of the labor required. The bone and muscle of the most athletic and robust are indispensable to the production of wheat, while the feeble powers of women and children are competent to the business of silk.

The power and capacity of our country to produce silk is unlimited, and need not be measured by its consumption of that article. We may as well export our own silks as foreign, and, to a large amount, supply the raw material to the foreign manufacturer. The South may add raw silk to their staple of cotton, rice and tobacco, for the exportation, while the North can meet the consumption of the nation with the manufacture.

The suitableness of the soil and climate of the United States for the culture of silk is indisputable. That matter is set at rest by the fact. It has been cultivated in Virginia and Georgia, and abandoned at the time, not on account of any physical deficiencies or difficulties, but the more profitable culture of tobacco first, and cotton afterwards. The culture is more profitable no longer; and it is believed that the necessities of the South, as well as the embarrassments of the north, point to a great diversity of the pursuits of agriculture as the only practicable remedy for both. It is now cultivated to a very respectable amount in the state of Connecticut. The Committee are enabled to state, on unquestionable authority that five small towns in that state produced, in one season, nearly two tons and a half of raw silk, worth, at low cash price, 21,183 dolls. Of this the town of Mansfield, containing a population of about two thousand five hundred, produced 2,430 lbs. This silk is converted into the most beautiful sewing silk, and some other valuable manufactures, by the skill and industry of that enterprising and ingenious people, and, thus prepared, is worth from seven to eight dollars per pound. This, it is said, greatly exceeds all the other disposable produce of the town; and what recommends it still more to the attention of the American People, is the important fact, that this is added to the other ordinary and accustomed productions, without diminishing essentially any of them. It employs old men, women and children, incapable of the severer labors of the field. It occupies little or no space useful for other purposes. The mulberry beautifies and embellishes the country, instead of encumbering it; lining the fences and hedges, and serving for ornamental shade trees. The tree diminishes much less than an apple orchard the productive powers of the soil for other purposes. In a word, the culture of this valuable material is so much positive creation, derived from the mysterious operations of an interesting little insect, aided and directed by the cheap care and attention of man.

Another consideration recommends the culture of this precious material still further to the interests and feelings of the American people. It is not sectional. Its culture may be rendered co-extensive with the Union, and carried as high at least as the forty-fifth degree of north latitude. The mulberry, at this moment, is growing in a vigorous and thriving condition as far north as Middlebury and Burlington, in Vermont; and, it is believed, will flourish wherever the apple tree will grow. It is indigenous to the southern region, and thrives there more luxuriantly than at the north; and wherever the mulberry will grow, there may the silk worm be reared. All may, therefore, participate in the benefits of this culture; and the community of interests and pursuits cannot fail to generate some congenial feelings, and facilitate the restoration of harmony to our political and social relations.

All this too, may be done without interrupting the ordinary pursuits of agriculture. The feeding of the worm commences with the first opening of the mulberry leaf, and continues for the period of thirty-two days, when the worm commences the progress of spinning, and eats no more. The nursing of the worm, and the winding of the silk, is slight in door work. The gathering of the leaves is the appropriate employment of children; and "one woman can make fifteen pounds of raw silk," worth at least sixty dollars, "in a season of six weeks."

So many and so weighty considerations concur in recommending the culture of silk to the American people, that the committee do not doubt their sagacity and intelligence, as well as their urgent necessities will lead them speedily and extensively to its adoption. Under these circumstances, the introduction into the country of the best varieties of the mulberry is a matter of national importance, and, your committee believe, worthy of the fostering care and patronage of the government. The excellence of the silk depends upon the properties of the mulberry leaf; and these are considerably diversified. The white mulberry is decidedly the best; and of this there are various species. The preference among the whole can only be determined by experience and comparison. This knowledge is proposed to be acquired by the memorial; and your committee are persuaded that it would be chiefly obtained for the nation by the grant of the prayer of the memorialist. Simply the rearing of so many mulberry trees as the committee propose to require on the premises, and for distribution, they think would greatly exceed in value to the nation the land proposed to be granted. A mulberry plantation would be established & raw silk produced, thus furnishing an example to the public, stimulating and affording the necessary instruction.

A communication from the Sec. of War, in reply

to an inquiry addressed to him by order of the committee, which accompanies this report, states the quantity of land owned by the United States at Greenbush to be 261 3-4 acres, which, at the time of the purchase, cost the government 9,000 dollars. It was then a valuable farm, fenced and cultivated. The committee are informed, and believe, that the fences are almost wholly demolished, and the farm, in other respects, gone to waste. These circumstances, connected with the general, depreciation of real estate, have reduced the value of the property to nearly one half the sum paid by government. It is not now occupied for military purposes by the nation, and, probably, will never be needed for that use. Your committee are of opinion that there exists no longer any inducement with the Government to delay selling said land, or in some way disposing of it for agricultural purposes. They think that the public interests cannot be better promoted than by appropriating it to the use designated by the memorialist. They have, therefore submitted the project of a bill, which, while it provides for the payment to the Government of a sum equal to the value of the land, is intended to ensure the accomplishment of the other important objects of the grant.

ART. 24.—NEAT CATTLE.—*Of the varieties and breeds of the Bull.* [Continued from page 8.]

The cattle of the Highlands of Scotland are divided into a number of local varieties, some of which differ materially from others, probably owing to a difference in the climate and the quality of the herbage, rather than to their being sprung from races originally distinct, or to any great change effected either by selection or by crossing with other breeds. It is only of late that much attention has been paid to their improvement, in any part of this extensive country; and in the northern and central Highlands the cattle are yet, for the most part, in as rude a state, and under management as defective, as they were some centuries ago. These cattle have almost exclusive possession of all that division of Scotland, including the Hebrides, marked off by a line from the Frith of Clyde on the west, to the Murray Frith on the north, and bending towards the east till it approaches in some places very near to the German ocean. Along the eastern coast, north of the Frith of Forth, the Highland cattle are intermixed with various local breeds, of which they have probably been the basis. There are more or less marked distinctions among the cattle of the different Highland counties; and, in common language, we speak of the Inverness-shire, the Banffshire, &c. cattle, as if they were so many separate breeds; but it is only necessary in this place to notice the two more general varieties, now clearly distinguishable by their form, size, and general properties.

The most valuable of these are the cattle of the Western Highlands and Isles, commonly called the *Argyle-shire Breed*, figure six, or the breed of the Isle of Skye, one of the Islands attached to the county of Argyle. The cattle of the Hebrides are called *Kyloes*, a name which is often applied in the south to all the varieties of the Highland cattle, not as a late writer has immagined, from the district in Ayrshire called Kyle, where very few of them are kept, but from their crossing, in their way to the south, the kyloes or ferries in the mainland and western Islands, where these cattle are found in the greatest perfection.

(Fig. 6.)

A bull of the Kyloe breed should be of a middle size, capable of being fattened to fifty stone avoirdupois. His color should be black or dark brown, or reddish brown, without any white or yellow spots.—His head should be rather small, his muzzle fine, his horns equable, not very thick, of a clear green and waxy tinge; his general appearance should combine agility, vivacity, and strength, and his hair should be glossy, thick, and vigorous, indicating a sound constitution and perfect health. For a bull of this description, Macneil, of Colonsay, in 1812, refused 200 guineas; and for one of an inferior sort, he actually received 170*l.* sterling. Macdonald, of Staffa bought one nine years old, at 100 guineas.

The cattle of Orkney and Zetland, are of a most diminutive size; an ox weighing about sixty pounds a quarter, and a cow forty-five pounds. They are of all colors, and their shapes are generally bad: yet they give a quantity of excellent milk; fatten rapidly when put on good pastures; and in their own district are considered strong, hardy, and excellent workers, when well trained to the yoke, and so plentifully fed as to enable them to support labor.

Of the Fife-shire cattle.—There are various traditions about the origin of this variety. It is said to have been much improved by English Cows sent by Henry VII. to his daughter, the consort of James IV who usually resided at the palace of Falkland, in that county; and as there is some resemblance between the cattle of Fife and Cambridge-shire, they are supposed to have been originally brought from the latter county. Others ascribe the origin of the present breed to bulls and cows sent by James VI. (James I. of England,) in payment of money which his oblig-

ing neighbors in Fife are said to have advanced for his equipment, when he went to take possession of the English throne.

The cattle of Aberdeenshire, the largest of which are said to have been produced by crossing with Fife bulls, have been long highly esteemed in the southern markets. It is observed, that every succeeding generation of them has encreased in size, for the last 30 years; and that the native breed has doubled its former weight since the introduction of turnips. The color is commonly black, but there are many of a red and brindled color. They are thinner in the buttock, in proportion to their weight; and deeper in the belly, in proportion to their circumferences, than the west Highlanders, and they yield a much larger quantity of milk. Many of them are brought to the south of Scotland, and kept during winter in the straw yards, for which they suit better than smaller cattle, as they are not so impatient of confinement. The ordinary weight of middle sized oxen, at from three to five years old, is from 40 to 50 stone; but after being worked for some time, and thoroughly fattened, they have been known to reach double this weight.

Of Fattening Calves by Suckling.

The most advantageous stock for suckling calves for the butcher, is that sort of cow which gives the greatest quantiy of milk, richness of quality being not so great an object, or so well adapted to the desired purpose. The Holderness cows are to be preferred in this view; not, however, to suckle calves of the same, but of a smaller breed: perhaps Devon calves surpass all others as sucklers, whether for quickness of proof, or beauty of the Veal; they are not, however, to be procured, but in or near their own county.

The method most commonly employed in fattening calves is, to allow them to suck; as by this method the object is probably not only sooner, but more effectually obtained than by any other means. The period which is necessary for fatening calves in this way must be different, according to circumstances, but it is generally from seven to nine weeks; however, in the dairy districts, where milk is considered a valuable article, scarcely half that time is allowed. There is another method, which is to give them the milk to drink; and when that is done, it is given to them morning and evening warm from the cow, and the quantity increased according to their age and strength. In whatever way they may be managed, they should be kept in pens in a close-house, and well littered. The author of the Synopsis of Husbandry observes, that as it is necessary that the calves should lie always quiet, in order that they may indulge in sleep at those times when they are not employed in sucking; it seems proper that the cow house should be situated in the most retired part of the yard, and that the pens should be kept as dark as possible. But notwithstanding this caution, the calves should by no means be suffered to lie too hot in the summer time, which would be apt to produce a sickness amongst them. To admit therefore, an occasional draught of fresh air, let a window be cut in each pen with shutters adapted to the same, and let these windows be opened whenever the closeness of the atmosphere indicates it to be necessary. In the summer season, they should rarely, if ever, be closely shut; and when it is required, the stream of air may be increased by opening the cow house door at the end of the building. Each calf should have a collar round his neck, with which the attendant may direct him in his suckling, but should never be fastened up in the pen. It is necessary that the pens be kept constantly well littered with the cleanest wheat straw, a proportion of which should be thrown into them every day; cleanliness being a most essential article in the fattening of every animal, and not more necessary to any than the calf, which but for this precaution, would in a short time demonstrate the ill effects of lying on his accumulated dung, which of all other animals is the most offensive, and highly septic. As the calves are yeaned, they are to be taken into the pens, and suckled on their on own dams, which, at first, will yield a far greater quantity of milk than is necessary for their offspring, so that another calf may be suckled thereon; or the cow may be milked, and the cream be reserved for butter, or applied to any other use that the owner may think proper. As the calf increases in size, it will require a larger quantity of milk: but whilst calves are young, one good cow will yield a noble supply for two; and and when the whole produce is demanded for one calf, another new milch cow should be provided, and these two cows will abundantly supply three calves with milk till the oldest is fit for the butcher; after which, if necessary, a fresh suckler may be brought in, and the business be carried on progressively by keeping the house constantly supplied with calves, so that the whole milk may be sucked, as the fattening of calves by suckling and the dairy cannot be conveniently united.

Young calves when permitted to suck their fill are often seized with a lax or scouring. To prevent which, the calves for the first fortnight or three weeks may be stinted in their allowance; and at the same time due regard should be taken that they do not pine ro decrease in flesh for want of milk. But after this age they should be allowed to suck as long as they choose, and every means ought to be made use of to increase their appetite, and render them more eager after their food. Chalk may be given for this purpose, as well as for giving to the flesh a delicate whiteness. The following is an excellent astringent remedy for the lax or scouring in calves:

Suet, four ounces, boiled in eight ounces of Milk,

Boiled starch, six ounces, Powdered alum one drachm.

The above quantities being the proportions for one dose for a full grown ox, one third of the quantities will be sufficient for a calf. Salt sprinkled in the trough will likewise act as a stimulus to the appetite; besides which, it is a common practice with some people to cram their calves with balls compounded of flour, pounded chalk, and milk, with the addition of a small quantity of common gin. Of these balls they give two, about the size of a walnut, once a day, or oftener, to each calf. These balls being very nutritious, in some degree supply the place of milk, and at the same time the spirituous mixture opperates on the creatures as a soporific, and thus, by composing them to sleep, increases their disposition to fatten: but where milk can be had in sufficient abundance, it is never worth while to have recouse to these factitious aids. When the demands of the calf, however, are beyond the ability of the cow, these balls come seasonably to their relief. In order that the calves may be provided with sufficient store of milk, the pastures should still be changed, whenever the cows are found to be deficient in this particular: and in the winter time, such food as is of a succulent nature, as grains, turnips, &c. should be always at hand to supply the want of grass: and these with a due allowance of the sweetest hay, should be their constant aliment during the time that the cows are confined to the yard.

When calves are slaughtered at six weeks or two months old, the veal is seldom of a good color; neither has the flesh of these young calves a taste equal to that where the animal has been suffered to live a few weeks longer. To attain both these ends of color and flavor, it is necessary that the calves should be maintained with plenty of milk, and regulated under such management as before directed, till they arrive at the age of eight or ten weeks, according to the season of the year, the more or less kindly state of the calf, or other eventual circumstances. During the last three or four weeks, blood should be frequently drawn from the calve, which will be a likely means towards rendering the veal of a color delicately white; a circumstance so much attended to by the butcher, that he will commonly depreciate such calves, which from the appearance of their eyes, are likely to die black, as they term it, though in other respects not to be despised.

Such calves as are suckled on their own dams will generally speaking, fatten in a shorter time than those which are afterwards bought to supply their places. The first obvious reason for this difference in their favor is, their not having been removed from the place where they were first dropped, and having always continued to suck the milk of their parent animal, which must in all reason be supposed of a more nutritious quality to them than that of any other cow. Secondly, the cow having so lately calved, the aliment nourishes and fattens in a higher degree than when the animal becomes stale milched. Cow calves are observed to fatten more kindly than the male or bull-calves; and these last are much more coarse-grained, and their flesh less delicate in taste than the former.

Marshal is of opinion, that to suckle calves in general after they are ten weeks old is bad management; for his account in this respect is uniform, those of nine or ten having paid as much a week as these of twelve or thirteen; and although a calf of six weeks old may suck nearly as much milk as a calf of twelve weeks old, yet the first month or five weeks the quantity is considerably less, and this advantage of their infancy is doubly as valuable to nine as it is to 12 weeks. There can be no doubt but that the profit of this system of fattening depends materially upon the quickness of return.

In some districts, barley meal, linseed boiled into a kind of jelly, and such like articles, are given to calves in fattening; but the methods above described are greatly superior, although it must be allowed that they may sometimes be considerably more expensive. (*To be continued.*)

ART. 25.—*Cheap method of forcing Rhubarb.*—[For the New-York Farmer.]

My rhubarb plants grow on an east border, a few feet from my barn and stable door, separated from the latter by a fence—the soil therefore very rich. In March, or sooner if I please, I place an old flour barrel, having but one head, over each stool or plant, the head uppermost to the extent that I wish to force. I then with a dung fork proceed to cover the barrels and to fill the intermediate spaces with fresh stable dung, to the thickness of a foot or more all round and above the casks. A fermentation soon commences, and the heat thus generated, the atmospheric air being excluded from the casks, soon causes the plant to grow vigorously, and in two or three weeks the barrel becomes literally filled with fine blanched, semi-transparent leaf stocks of the rhubarb. I carefully remove the manure, raise the barrel, break off the largest leaves, but am careful not to disturb the crown, and then replace the cask and manure for a second crop. I have in this way taken enough from a single plant, in April, for ten or a dozen pies. The leaf stocks thus blanched, require no pealing. They are very brittle and juicy, and require to be merely washed and cut to prepare for cooking. Sea Kale is forced by the same process. J. B.

Albany, Feb. 1829.

ART. 26.—*On laying down Grass Land, in answer to the query of "Rusticus ex urbe."* [To the Editor of the N. Y. Farmer.]

Sir, In Vol. 2, number 1 of the Farmer, "*Rusticus ex urbe*" enquires, "Is the general practice of sowing only one or two kinds of grass seed, in laying down grass lands either for pasture or mowing, the best and most natural?"

Timothy, or Meadow cat's tail grass, *Phleum pratense*, and red clover, *Trifolium pratense*, are the grasses most generally cultivated in the middle and northern States. The former is a native, and favorite of this portion of our country. It is most productive upon low and moist ground; but it succeeds well with clover upon upland. To one who has sowed these grasses alone, and together, and experienced the result of both modes of cultivating them, I think there will remain no doubt, but that it is best, to sow both together.

I have sowed clover alone, and it became so lodged before it was fit to mow, that it was almost impracticable to cut it, and a considerable portion of it was decayed; the roots also were exposed to, and greatly injured by, the frosts of the ensuing winter and spring. I next sowed timothy alone, and found that it was scorched and injured by the heat of the summer.—Since that period, I have uniformly sowed both together, and with good success. For mowing I sow eight pounds of clover seed and four quarts of timothy to the acre; and upon pasture land, the same quantity of timothy, and twelve pounds of clover to an acre. The ordinary yield of hay, is from two and a half to three tons to the acre. And both horses and neat cattle, the best judges of good grass and hay, prefer this combination to either kind alone.

It has been observed by some farmers, that these grasses ripen at different times, and therefore ought not to be cultivated together: in my opinion, there is but little weight in this objection. It may have arisen from the manner of sowing. Many sow the timothy in the fall, and harrow or brush it in with the grain, and the clover in the spring. My practice is to mix both together, and sow in the latter part of March, or early in April. The first season, and a few weeks after the grain is cut, I pasture it lightly; after this, reserve for mowing such as is designed for meadow, excluding all animals from it in the spring: and by the time the clover blossoms begin to turn brown, the timothy is in full bloom, which I consider the best time for cutting both; and as the clover is sustained by the timothy and kept from lodging, the whole may be cut with ease, and without loss of any part.

F. J.

Remarks.—We thank our correspondent for his favor; he has not, however, we believe, fully comprehended the query of "Rusticus ex urbe." He intended to inquire, if sowing only one or two kinds of grass seed was as beneficial as four or more kinds, as practiced in Great Britain. The quantity sown in England for mowing, is 10 pounds of red clover, 2 of white do. 2 of yellow do. and one bushel of annual Rye-grass—and for pasture, 4 of red clover, 6 of white do. 4 of yellow do. and one bushel of perennial rye-grass, to the acre. The proportions are varied, and other kinds substituted according to circumstances. It is on this point, we presume, "Rusticus ex urbe" would wish for information.

"In all permanent pastures, Sir H. Davy observes, nature has provided a mixture of various grasses, the produce of which differs at different seasons. Where pastures are to be made artificially, such a mixture ought to be imitated; and, perhaps, pastures superior to the natural ones may be made by selecting due proportions of those species of grasses fitted for the soil, which afford respectively the greatest quantities of spring, summer, lattermath, and winter produce."

ART. 27.—*Detrimental propensity in a Cart-horse.* [For the New-York Farmer.]

Sir.—Whatever relates to the nature of this valuable animal, must be of importance to every man interested in his management, with a view to the application of his strength for the purposes of draught in the plough or cart &c. I have at present a great deal of carting to do, and on that account lately purchased a very stout, good-looking horse, for which I paid the sum of one hundred dollars: but alas! instead of his fulfilling his duties like other horses, I find him, by sad experience, to be possessed of properties, as strange and unnatural, as they are vexatious. I feed him well, I harnass him like any other horse, and yoke him with the cart behind him, as I suppose every other man in this country does; but instead of his proceeding in a forward direction either with or without a load, he remains as unalterably fixed in his position as the Catskill mountains, unless permitted to move in a backward direction. In this way he can apply the power of a mammoth. But as I have never before been used to the driving of a horse and cart through the streets in this manner (he will proceed in no other) I am very awkward at it, and every boy I meet accuses me of being a native of a country I never saw; one of the friendly sons of which told me very kindly that I had just only put the wrong end of the beast into the shafts, and that if I would reverse his position, the horse would draw as well as any man's horse; But in this case I should have to get a new collar and hems, as those that fit his neck would be too large for his tail, whose posi-

tion, I am afraid, would be so elevated by the stress of drawing as would still leave my situation as discernable and perhaps as comical as ever. Now, Sir, if you, or any of your correspondents, could inform me what can be the cause of this queer inclination of my nagg, or suggest any other mode of relief, it would be a very great service to me, as well as, to some others whose cases are bordering upon a similar predicament: What renders the subject more lamentably alarming, it is said that strong symptoms of the same affection of contrariety appear to influence the conduct of the loving help-mates of those who possess such horses. I have long deferred entering the Hymeneal band from many considerations, but if there be any truth in the possibility of any of those within its limits ever being seized with propensities similar to those of my "Jolly," then all farther consideration of my connubial felicities are at an end. My horse has completely got the upper hand of me, and unless I can be so assisted as to be able to turn the scale against the dumb animal, I need never try to assume the reins of (for any thing I know) a still more critical kind of government.

Sand Banks, Feb. 1829. A DIRT CARMAN.

Remarks.—We truly hope some of our correspondents will have compassion on the poor carman, and help him out of his difficulties. It has always appeared surprising to us, that no successful method has ever been adopted to overcome this sullen propensity of the horse. Reared up in the fear, and trembling under the lash, of man, and perfectly passive in general, still no coercion, no fawning, will overcome his sullenness. *Ed.*

ART. 28.—*Interesting experiments in obtaining new varieties of Potatoes, by sowing the seeds of the balls.* [From the New England Farmer.]

MR. EDITOR—As my name has found its way into some of the papers of the day, in relation to raising from the seed a large variety of potatoes, I tho't it might not be unacceptable to your readers for me to give a description of the potatoes, and my method of raising them. In doing this, I shall endeavor to relate the experiment in as intelligent a manner as possible, in order that if any other person, into whose hands your useful paper may fall, should be desirous to repeat the experiment, they may be able to profit as much by my errors as by any successful method I may have adopted.

A year ago last fall, I collected, principally, I believe from the Early Whites and the Calicoes, a quantity of potato balls, and laid them by, in a room, exposed to all the inclemencies of the season until the next spring, about the last of March or the first of April, the exact time not known. When I came to examine them, preparatory to planting, I found them dried so hard and shriveled, that I was afraid they were entirely spoiled. I, however, selected some of the best of the balls, and after much labor, in soaking them in warm water, &c., succeeded in extracting a few seeds, and planted them in my green house. The rest of the balls I kept in water a week or more, without its appearing to have much effect on them. As it did not appear to me practicable to separate these seeds from the balls, I began almost to despair of being able to proceed with my experiment to the extent I had proposed. The tho't occurred that if I separated these balls into small pieces and planted them, some of the seed might possibly come up. I resolved to try the experiment, which succeeded beyond my most sanguine expectations. In every place where I put a piece of one of these balls, the plants came up very thick.—In patches of, perhaps, a half an inch in diameter, there were from twenty to fifty plants, so that I soon found that I had abundance of them. As soon as these plants were well up, and while they were yet in the seed leaf, I took them up carefully, and planted them out about three inches apart, as I did also others, which I had previously sowed, after they had gained more strength. I found that they bore transplanting remarkably well, as almost every plant lived, and that without any particular care of shading &c., though I generally chose a cloudy day to transplant them. I found by computation, after I had pricked them out in rows, that I had about two thousand plants, which occupied about one fourth part of my green house. I let these plants remain in my green house until all danger of frost had passed, or about the middle of May, when I re-transplanted them into a well prepared spot in my garden, about six or eight inches apart. Here, I found afterwards I had committed a great error in planting them too close; for the vines, by their luxuriant growth, soon covered the ground. Notwithstanding they were planted so thick they bore bulbs, and even ripened their seeds; and grew as stout and as stocky, as any I ever saw, even from the long red potatoes; and the yield of some of the plants would nearly cover double the space of ground allotted to them. Hilling was entirely out of the question, and some of them were destroyed in attempting to eradicate the weeds, although the operation was performed by a very faithful man, with a strong injunction to be be careful. I was led into this error by supposing, as I had both read and heard, that the yield the first year would be very small, not more than two or three potatoes about the size of a common walnut. This I found by experience, which is the best schoolmaster, to be a mistake; for I had, on a considerable

number of my vines, some fair sized potatoes, and a few larger than the average growth of early whites.

The most interesting part to me, and that which I had been anticipating all summer, was the digging of them. It is a matter of great interest to me, to see with what small beginings, and apparently weak means nature achieves her great designs. My anticipations in this case were not disappointed. I dug them principally myself, and mostly with my hands, for the double purpose of not injuring, and keeping the potatoes from each plant separate. I found them of all colours from black to white, besides a great number that were variegated, and of all sizes from that of a pea to a full grown potato; and of all forms from a round to a long red, including some handsome ovals; and in all numbers from one to several nundred in a hill, if I may be allowed the term. The greatest yield was from a vine, which produced fifty-two, nineteen of which were tolerably fair sized potatoes. There was a great difference in the growth of the vines, both in the green house and in the garden. In transplanting them from the green house into the garden, I discovered on some of the small vines, a few small potatoes about the size of peas, while on those which were much larger, and looked more thrifty, I could not discover any. And so it was in the measure in the fall when I dug them.—Some of the largest size vines had no sign of a potato on them; but then again, some of the largest sized vines bore the greatest crops of potatoes.—I found that the size of the vine was no criterion by which I could judge of the probable crop of potatoes. There were a good many varieties, which I think worthy of notice, a few of which I will name, and attempt to describe.

There was one vine, which had, I should think, several hundred, all about the size of a pea; they hung in clusters, something similar to grapes. Another kind resembled in some measure, in form, the sweet potatoe. Another bore all the potatoes on the stem above ground. They were black, and in considerable numbers, and would average about half size. They did not hang in clusters, but were distributed along the main stem to the distance of about two feet, and bore it by their weight, down to the ground. In others the potatoes all grew in one clump, so much so as to be indented one into another; and pressed into all kinds of shapes, with obtuse edges. There did not appear to be any soil to speak of between them. In some of the hills, the potatoes were all small; in others there were no small ones, but all middling sized. In others all large, and in some mixt, large, small &c. There were some round, some oval, some long, some very smooth, shining skins, and some remarkably rough. I have all colors in all shapes, and am doubtful if there ever was before so great a variety of potatoes seen together.

There seems to me to be considerable difficulty Mr. Editor, in regard to what will be the best course for me to pursue, in order to secure the greatest benefit with the least expense, from my experiment. The first question is to know if it is necessary to plant all the potatoes from each plant, in order to obtain all the varieties; or in other words, will all the potatoes, produced from the same vine, the first year from the seed, yield potatoes possessing the same qualities? If I could be well assured that all the potatoes produced from any single seed would yield potatoes possessing precisely the same qualities, then, instead of having twelve or fifteen thousand potatoes to plant, I should not be under the necessity of planting more than about fifteen hundred; or for fear of accident, say three thousand.

I lost in those vines, which bore no potatoes, which died in transplanting, or were destroyed in weeding, about five hundred plants, so that I had about fifteen hundred, which bore potatoes. The second question is, how far apart they must be planted, in order to prevent them from mixing? This, I conceive to be very important; for, if they should mix, the potatoes I might select to test the quality, might be entirely different from all the rest in the same hill, creating confusion and uncertainty in my next year's crop. And if I must plant them at any considerable distance apart, it will require more ground than I shall be willing to spare.

That potatoes will mix in the ordinary way of planting them, I had occular evidence last season. My man, who knew that I was something curious in these things, brought me a potato, apparently an early white, with a light red streak, in imitation of the calicoes. He said that it grew among the early whites, in the vicinity of some calicoes. A row of calicoes ran parallel to, and immediately adjoining the row of whites, from among which this potato was taken. I have preserved it among my seedings, and intend planting it with them. I had some seedings marked in precisely the same manner. The third question is, what method shall I adopt to test their quality the next season, should I live to finish the experiment?—For, if I have fifteen thousand hills of potatoes, and must try every hill separately, if they are cooked three times a day, it would require thirteen years to finish the trial. You see, Mr. Editor, into how much difficulty my prying curiosity has involved me; and that it will require much time, trouble, and expense, to carry on this experiment to completion in the same style in which it was commenced. From the success which has so far attended my weak endeavours, I feel desirous that it should be continued under the best possible auspices. Although I candidly confess, that curiosity, combined with amusement, was the chief inducement at the commencement of the experiment,

as I performed all the work, except weeding, with my own hands; yet I will not deny, that the honour, the honour, Mr. Editor, should I be successful in raising a very superior potato, in point of precocity, quantity, and quality, which present appearances seem to justify me in anticipating, is not without its influence on my mind. Should I not succeed in obtaining a variety, in which all these good qualities unite, yet I hope to have several, in which two of them shall predominate in an eminent degree.

Jacob Tidd.

ART. 29.—*On the Cultivation of the Artichoke.*
By Thomas Bridgeman, Gardener.

Varieties.—There are two principal varieties or species of the Garden Artichoke; the *Cynara Scolymus*, or French Artichoke, and the *Cynara Hortensis*, or Globe Artichoke.

It is a perennial plant, producing from the root annually its large squamose heads, in full growth, in England, in June or July until October or November. The Globe Artichoke, which produces large globular heads, is best for general culture, the heads being considerably larger, and the eatable parts more thick and fleshy.

Both sorts may be raised from the seed, or young suckers from the bottom taken off in the spring. A plantation of Artichokes will continue to produce good heads six or seven years, and sometimes longer; but it must be observed. that if a supply of this delicious vegetable be required throughout the season, a small plantation should be made from suckers every spring for a successive crop, as the young plants will not produce their heads in perfection till after the crops of the old standing ones are over.

The most likely way to obtain a supply of artichokes in this country is to sow the seed in the latter end of March or early in April, in a bed of good rich earth, or it may be planted in drills one inch deep, and about twelve inches apart. The ground should be light and moist, but not such as to become bound up by heat; or that in conseqnence of too large a proportion of sand is likely to become violently hot in summer, for this is extremely injurious to these plants. After the plants are up they should be kept free from weeds, and the earth often loosened around them.

At the approach of winter they should be covered up with straw, leaves or light dry litter, and they will be fit to transplant in the following spring.

The business of transplanting must be performed the latter end of March or early in April. Having fixed upon a proper soil and situation, lay on it a good quantity of rotten dung, and trench the ground one good spade or eighteen inches deep, incorporating the manure therewith; this being done take up the plants and after shortening their tap roots a little, and dressing their leaves, plant them with a dibble, in rows five feet asunder, and two feet plant from plant in the row, leaving part of their green tops above ground, and the hearts of the plants free from any earth over them, and give each plant a little water to settle the roots.

The following method of planting artichokes is practised in Berkshire, England; viz. place the plants in rows three feet and a half or four feet apart in the the rows and so deep that a basin may be formed round each plant, as it is fond of water, and in the fall these basins are filled up by drawing the earth into them, and the plant is covered up two or three inches by rounding up the earth over them.

Some make new plantations with the seeds at once, this may be done by preparing the ground as above, and sowing a few grains of good fresh seed in each spot where a plant might be set, covering them about three quarters of an inch deep, and then by marking each spot with a peg stuck in the ground, the vacant spaces may be planted with cauliflower, cabbage plants, dwarf beans, lettuce, &c., taking care to keep the plants at a sufficient distance from the young artichokes.

The winter dressing of Artichokes is an importan operation; on it depends much of their future success. This should not be given them as long as the season continues mild, that they may have all possible advantage of growth, and be gradually inured to the increasing cold weather; but it should not be defered to the setting in of hard frost, lest the entire work be lost.

In the first place, cut all the large leaves close to the ground, leaving the small ones which rise from the hearts of the plants; after this, line and make out a trench in the middle, between each row, from fourteen to sixteen inches wide, presuming that the rows are five feet apart, as directed. Then lightly dig the surface of the beds from trench to trench, burying the weeds, and as you proceed, gather the earth round the crowns of the plants to the height of about six inches, placing it in gently, between the young rising leaves without burying them entirely under it; this done, dig the trenches one spade deep, and cast the earth thereof equally between and on each side of the plants, so as to level the ridges, giving them at the same time a neat rounding form; finish by casting up with a shovel the loose earth out of the bottom of trenches, evenly over the ridges, in order that the water occasioned by heavy rains, &c., may immediately run off; on which account the trenches ought to have a gentle declivity, as the lodgement of water about the roots in winter, is the greatest evil and danger they have to encounter; even

greater than the most severe frosts that we are subject to.

The beds are to remain so, until there is an appearance of hard frost, when they should be covered with light dry litter, straw, leaves of trees or the like, the better to preserve the crowns and roots from its rigour. In this manner the roots will remain in perfect safety all the winter. As soon as the very severe frosts are over, the beds must be uncovered, and when you perceive the young shoots beginning to appear above ground, or rather one or two inches up, then, and not before, proceed to levelling down the beds into the alleys or trenches, rounding them in a neat manner; then dig and loosen all the earth round the plants; at the same time examine the number of shoots arising on each stool or root, selecting three of the strongest and *healthiest looking* on every stool to remain; all of which are slipped off close to the roots with your hand, unless you want such to make new plantations with, in which case, any extra number for that purpose are to remain on the mother plants until they are about eight or ten inches high from their roots, or junction with the old plants, when they are to be slipped off and planted, in a bed prepared in the same manner as directed for the young plants, taking care at the same time to close the earth about the crowns of the roots, and drawing it a little up to the remaining suckers.

Observe the spring dressing is to be given when the plants are in the above described state, whether that happens in February, March, or April, occasioned by the difference of climate, or the earliness or lateness of the spring.

The gardeners near London, generally take off the side suckers, or small artichokes, when they are about the size of a hen's egg. These meet with a ready sale in the markets, and the principal heads that are left are always larger and handsomer. The maturity of a full grown artichoke, is apparent by the opening of the scales; and it should always be cut off before the flower appears in the centre; the stem should be cut close to the ground at the same time.

When your artichoke plantations want manure, lay on a coat of old rotten dung, previous to the digging of the trenches in November, and cover it over with the earth as you throw it up; in the spring following dig it in.

ART. 30.—*Remarks on Mr. Phelan's Directions for selecting the best Grape Vine Cuttings.* [Communicated for the New York Farmer, and Horticultural Repository.]

Mr. Editor—In perusing the last Number of the New York Farmer, and Horticultural Repository, I observed under Article 11th, directions for selecting the best Grape Vine cuttings, for early maturity and abundance of fruit, by Daniel Phelan. Mr. P. says, the success in obtaining a fruitful vine, depends much on a proper selection, and affirms, that *cuttings* properly managed, will produce fruit sooner, and of a better quality than *rooted plants*. I should like to know what Mr. P. means by saying that cuttings will produce fruit sooner, and of a better quality, than rooted plants; and that he would explain himself more fully, as to the *superiority* of the *quality* of fruit produced from *cuttings*, over that of rooted plants, and the difference of the time of their bearing. If getting plants into a bearing state *soon* be an object with Mr. P., rooted plants will very often bear the first year that they are planted; if he considers that of any benefit to them, and will make shoots, of from fifteen to twenty feet, if not stopped in their progress. If Mr. P. can produce fruit from a *cutting* sooner than from a *rooted plant* as above stated, then his *mode* ought certainly to be considered original. Mr. P. says that *plants* sent from a distance, are not so good as cuttings, which I think no person would be surprised at, if treated according to Mr. P.'s directions, which is to have their fibres all docked off, and nothing left, except the bare stump, and I doubt not that Vine growers would rather prefer *cuttings* to young *plants*, after coming through Mr. P's scientific hands. Mr. P. says there is still a better way to have fine grapes, and also to have them sooner, by making a hotbed in February, and planting cuttings in pots, and protecting them there until July. I would ask Mr. P. after being at the trouble of keeping his plants in a frame during four months, how much they would measure in length or circumference when at maturity, so as to be able to distinguish the superiority of his *mode*, over the common method of growing in the open air when properly managed? Mr. P. with respect to summer pruning of Vines says, that as the plants advance in height, they will push out side branches, which must be constantly picked off as they grow, but not in the common method, which, he says, is to break them off a joint above the eye. I am surprised why Mr. P. calls this the common method of summer pruning, to stop the side shoots at the first joint, in place of pinching them close off by the eyes of the main shoot. I do not suppose that any one who ever adopted any system, in the training of the Vine, would take the trouble of stopping the laterals at the first joint; they would rather run the risk of an eye pushing, and then they might stop it at the first or second joint, if the eye should be required next year: but I think Mr. P. speaks of things which but seldom happen, unless the Vine is cramped for room. However it is to be hoped something more will be heard from Mr. P. than mere conjecture, or what he has heard others say, in relation

to his superior mode of cultivation of the Vine, and that *cuttings* will bear fruit sooner, and of a better quality than *rooted plants*.

I am, Sir, &c.

A SUBSCRIBER.

ART. 31.—*Report of the Visiting Committee of the New York Horticultural Society, for* 1828.

The special duty with which the Committee were charged, was to report to the Society such information with regard to the actual state of Gardening in this state, as they should be able to collect from an actual inspection of various establishments in this neighbourhood. With this end in view, the Committee have executed the task assigned them, as far as their opportunities would permit; having, in the course of the season, visited a number of the most distinguished establishments, which would best enable them to judge of the state of improvements, and the style of Gardening most prevalent among us.

Their observations may be distributed under the different heads of the *Kitchen Garden*, the *Conservatory* or *Greenhouse department*, and *Landscape Gardening*.

The city of New York, affording one of the most extensive markets for vegetables of all descriptions, and offering prices sufficient to repay the labours and encourage the skill of gardeners, may naturally be supposed to be in no wise deficient in any articles of the Kitchen Garden, either as to quality or abundance. In consequence of this continual demand, the style of gardening practised in the vicinity of our city is almost exclusively of this kind. From the number of establishments visited by the Committee, they are impressed with a conviction that our improvements in this department may be fairly compared with those of similar establishments in Europe. This department of our Horticulture may be considered as having arrived at a high degree of perfection. In contrasting it however with the progress made in the same branch in Europe, we may notice a deficiency which remains to be supplied, in the comparative neglect of the use of artificial means to produce vegetables of the class under consideration, so as to prolong a supply beyond their ordinary season. The labours of our gardeners are as yet, with few exceptions, limited to such esculents as are raised in the open ground, and require no artificial heat or covering. Such articles are perhaps found to produce the most profitable returns; but there is sufficient reason for believing that ample remuneration would be found among our citizens, for the expense and trouble of employing forcing houses, and other means of producing extra seasonable articles.

The same circumstances which appear to restrict the productions of the Kitchen Garden to the useful and marketable kinds, operate in a great degree in the extent and management of our Greenhouses. The class of plants cultivated in those visited, were generally such as are most in request among families, as ornaments for parlours; for instance, geraniums, roses, and others of the kind we are accustomed to see exhibited for sale in the markets of our city. In very few instances which have come under our inspection, are plants cultivated which are of extreme rarity, or which require great skill or care to bring to perfection. On this island there is but one or two Hothouses, properly so called, and Successionhouses are absolutely unknown; so that the state of our exotic floriculture, depending upon these two important appendages to the gardens of Europe, may be readily inferred. The Committee observe with pleasure, that the choicest collections of plants, for rarity, and without reference to their marketable valuable, are noticed in the Conservatories of members of this Society.

With regard to Landscape Gardening, the Committee have to report that from the examination which they were able to make in the vicinity of this city, they are of opinion that this part of Horticulture is yet in its infancy among us, as an art. The art of laying out grounds so as to display all their beauties, and conceal their defects, is a subject of much interest in Europe, where large sums are expended in embellishing the grounds surrounding the dwellings of proprietors. There the profession of Landscape Gardener is common, though almost unheard of among us;—a profession requiring the practical gardener's skill, with a knowledge of the qualities and nature of Forest trees, their capacity for picturesque effect, either separately or in groups, a correct taste in selecting natural, or creating artificial beauties, and a practised eye in discriminating the varied features of natural scenery. With these qualifications, the Landscape Gardener has tracts of land of considerable extent and diversity to operate on, assisted by all the resources which the wealth and taste of the proprietor can supply. The grounds attached to the country residences of our citizens are usually too limited to give much opportunity for the display of this style of gardening, and are generally appropriated to the more useful and profitable purposes of the Kitchen Garden, or the orchard, a small portion near the dwelling being reserved for parterres. There are, however, many beautiful sites in the neighbourhood of our city, particularly those which border on our waters, in which a fine effect might be produced, by a proper application of the principles of this branch of Horticulture. For improvements in this, as well as in the preceding departments, we must depend upon the greater diffusion of wealth among us, and the consequent greater leisure and opportunities for devotion to the pleasures of such

pursuits. It is the legitimate province of our Society to accelerate the progress of improvement in this respect; and the Committee would beg leave to recommend the subject to their attention, as worthy of the same encouragement which the Society offers to the other branches of Horticultural skill.

A. HALSEY, *Chairman.*

New York, Jan. 27, 1829.

ART. 32.—*The Cultivation of Maple Trees, and the process of Manufacturing the Sugar.*—By C. E. RUGGLES. [Communicated for the New York Farmer and Horticultural Repository.]

The culture of this beautiful and useful tree has not received that attention which its importance demands. As an ornament, and as a source of income, the farmer cannot make a better selection to grace his yard and the road side, and to transplant into an orchard. In point of national wealth too, as multiplying our agricultural resources, it should be an object of no small regard.

In the northern and western sections of this state, particularly in the counties of Jefferson and Lewis, the inhabitants are very laudably engaged in transplanting these trees into orchards, and along the lanes and roads. In the town of Lowville, one farmer has an orchard of six hundred trees. Those growing on low, wet lands, are not as productive of sugar as those on upper lands. The latter may be known by the roughness of the bark, and by growing to a larger size.

The trees are tapped when about eight or ten inches in diameter, and will, at this period, produce from three to six pounds of sugar each season. Very large trees have been known to produce fifteen pounds. The sap or juice of these trees may be converted either into sugar or well flavoured molasses. The best method of obtaining the sugar, is to have the buckets perfectly clean; and when sufficient quantity of the sap is collected for boiling, it should be strained through a woollen cloth into the evaporator. The best evaporating vessel should be about four by six feet long, and eight inches deep; the bottom of sheet iron, and the sides of wood, set in mason work, so as to protect the sides from injury by the fire. The advantages of this construction are, rapid evaporation, by having the surface of the fluid very great in proportion to its depth, consequently a saving of fuel, and preventing that blackness which is communicated to the sugar when boiled in a vessel entirely of iron. After the fluid is boiled to the consistence of West India molasses, it is allowed to cool, and then strained through fine flannel. It is again put over a gentle fire in a clean vessel, with a quantity of fresh blood, well mixed with it. The blood will coagulate, and rise with the impurities to the top, which are carefully skimmed off. After this, a slow evaporation is kept up, taking care not to burn the sugar, until it is sufficiently done to granulate, which may be known by its granulous effect on the tongue. Most people, however, have various and peculiar methods of ascertaining its crystalline state. It should now be removed from the fire, and stirred until cool when it will be composed of large sparkling grains. The sugar made by this process is found to be far superior to that made in the common way of running it into moulds or cakes, and is susceptible of high refinement.

ART. 33.—*Improvement in the Formation and Structure of the Horse.* [From the Poughkeepsie Journal.]

Those engaged in scientific pursuits in relation to medical subjects, have long observed the effect of certain positions of the human frame, and have seen that the pursuit of particular objects, have a great influence in the formation and structure of the body by producing peculiar shape and conformation of particular parts. In some instances, unusual muscular power in the upper extremities; in others, the chest becomes contracted and narrowed in its capacity thereby curbing the action of the lungs, depriving the system of its necessary supply of vital air, or predisposing to pulmonic disease; at others, the chest becomes enlarged in its capacity, giving an unnatural prominent appearance to the thorax. At other times, peculiar employments bring about an irregularity in shape and deformity in the inferior extremities, calculated to diminish their ordinary beauty and usefulness, or to add to their elegance and muscular power. All those effects, in the progress of human life, have an influence on the apppearance, the health and well being of the subject; therefore become proper subjects of medical investigation. This principle, so well known and understood in physiologicial inquiry, has not been particularly noticed so as to be applied to the formation and structure of brute animals, in order to improve their beauty and value, until recently. Mr. A. Carman, of Hyde-Park, Dutchess county, has turned his attention to this subject, and brought it to such a state of perfection, as to obtain a patent for the improvement of the shape, carriage, action and muscular power of Horses, to which the attention of the public is called.

A work, somewhat elucidating the preceding remarks has lately been published by M. Broussias, of the military Gymnasium of France, from the review of which, in a London Medical Journal, some appropriate remarks occur, and from which some extracts follow. "We agree with the author, that such exercises (and position) if properly regulated, have a powerful influence on the system; on this account it deserves the consideration of statesmen, divines, phi-

losophers and physicians; it interests the latter in a double manner, as an instrument of preserving health and affecting cure. This exercise bids fair to exert a considerable influence in the rising generation." Again, "this agent is capable of being directed locally to this or that particular part; as for example, to the dilation of the chest, and to the invigoration of any of the limbs, or the muscles of a particular part." "By a skilful use of this measure, we may enable one organ or system to predominate over another." It is further observed, that watermen who are in the constant habit of rowing, have large chests, strong muscular arms, short bull necks, and rounded backs but when we view them a little lower, flattened glutens, thighs spare, legs seldom adorned with a calf, are presented. The chest almost Herculean, the legs miserable; this structure gives strength for the handling the oar, but not for the arm, &c. It was the opinion of Lord Monboddo, that, by long habit and position, the shape and deformity or beauty of many of the inferior animals had undergone material change; and even men, by occupation, by habit, have varied their appearance in many respects and relative proportion of body.

The proposition of Mr. Carman, to improve the beauty, action and power of Horses by position and exercise while growing, is entirely reasonable and consistent with the foregoing observations, corresponding with intelligence derived from natural history and the principles of sound philosophy. We are induced to believe that by applying his principle and feed box with perseverance, such a shape and conformation may be given to the forming muscular and ligamentous fibre of young animals, as will greatly add to the beauty, elegance, and useful performance of that valuable domestic animal—the Horse

AGRICOLA.

ART. 34.—*Hints to the Editor of the New-York Farmer, respecting Communications which he admits into his columns.*

SIR—The contents of Art. 9th, on the 10th page of your last number of the Repository, are the principal cause of the following observations. For the honest, warm-hearted author, Mr. Thomas Bridgeman, I think no one has a higher respect than myself. Nor is it from any spirit of retaliation, that the following observations are freely submitted for the consideration of both him and you. Mr. Bridgeman seems very laudably inclined to serve the horticultural interests of our common country, and, no doubt, from this view alone, has laid the handle of his rake pretty freely upon my back, for writing, as he thinks, in an erroneous strain. Be that as it may, I think he can have no objections to my using a similar freedom in noticing his writings, as he did with mine.

Mr. Bridgeman's "Directions for the Cultivation of the Vicia Faba, or Broad Bean," in this climate, I consider to be not only useless, but pernicious, for the following reasons:—He has not stated a single instance of his own, or of any other gardener, having had sufficient experience of the practical success of any of the methods which he directs for their cultivation. Their culture has been tried here by all the methods he recommends. That in some seasons, a few of the sorts bear something like a crop, has never been denied, but to make it appear that they are worth cultivating here, it would have been useful if Mr. Bridgeman had exhibited his "talent of suggesting new principles of science, or presenting more forcible illustrations of old ones, by which to add something to the stock of knowledge already attained." Instead of this, he encourages their culture to the loss and disappointment of those unaware of the precariousness of the crop, without pointing out any new or more successful method. For this reason, the columns which his writings occupy in your Repository, are worse than blank paper, however well intended.

During a nine years' horticultural practice, as gardener for the late Henry A. Coster, Esq., I do not recollect, that I ever failed a single year, out of the nine, of obtaining a sufficient supply of the broad bean for Mr. Coster's own individual use. The quantity of ground I used to plant, would have produced enough for the supply of an ordinary family in Scotland; but, in some seasons, I had hard work to procure enough to gratify my highly respected employer alone. The above, sir, are a few plain, honest reasons, why I differ from Mr. Bridgeman, which, I think, none of your readers can misunderstand, or misconstrue, as intending any disrespect to a man whose good intentions I approve, but with whose views on horticulture, I do widely disagree. I should, however, be sorry to discourage either you or Mr. Bridgeman, from a continuation of the proposed "Series of articles on the culture of useful vegetables, not generally introduced into the United States;" yet I can tell you both, as a friend, that unless they can be supported by those qualifications which the directions for cultivating the broad bean, are deficient in, you had better, in my opinion, defer them, until such time as Mr. Bridgeman's own well-tried practical experience, can authorize him to recommend them to the practice of others. For it is of more use to the public, to be informed of the successful, or unsuccessful practical result in the cultivation of any vegetable, than a whole volume of untried, speculative dissertations. That some successful method of cultivating the Broad Bean, in this climate, may yet be found out, is not at all impossible. But that any of these methods, which have so long

proved abortive, should now prove more successful, is not probable. It is, therefore, to be hoped, that when Mr. Bridgeman gives us directions for cultivating the Broad Bean, they will be founded upon the average results of at least two or three years' crops, so that his followers, in pursuing his course, may, in no ordinary cases, be again disappointed. If he, or any other man, will be so good as to cultivate, successfully, for two or three seasons, any superior variety of Brocoli, Cauliflower, or any thing else, and tell us their mode of doing so, it would be putting, not only us in this vicinity, but the country at large, under obligations, that ought never to be forgotten; and one column of your paper, devoted to the description of such an actual performance, would be, in my estimation, of more real service to the public, than all that Mr. Bridgeman has, as yet, written, or otherwise can write on the subject; and, I dare say, he will honestly think, I might, also, have included that of

Your most humble servant,

WILLIAM WILSON.

New York, February 1829.

REMARKS. Mr. Wilson's hints accord very much with our views. On practical subjects, the results of well tried experiments, are what we would generally wish our columns to contain. But when gardeners of ten to forty years experience, on both sides of the Atlantic, think proper to favour us with communications, under their own names, our deference for their attainments in horticulture, impels us to give them a free access to our columns. And should they, like all the rest of their mortal brethren, now and then fall into a mistake, we do not apprehend any serious evils to the little community of our readers, knowing that the champions of truth will soon rise and dispel the mists of error. Incorrect statements rectified, and false doctrines confuted, render truth more striking and clear. As for Mr. Bridgeman, he can speak for himself, provided he will give us *multum in parvo*.

ART. 35.—*Principles of Improving the Domestic Animals used in Agriculture.* [From Loudon's Encyclopedia of Agriculture.]

The animals in use in Agriculture are few, and chiefly the horse, ox, sheep, swine, and domestic fowls. The first is used solely as a labouring animal, and the rest chiefly as furnishing food. In applying the general principles of physiology to these animals with a view to their improvement to the use of man, we shall consider in succession the principles of breeding, rearing, and feeding.

By *improvement of a breed* is to be understood the producing such an alteration in shape or description, as shall render the animal better fitted for the labours he has to perform; better fitted for becoming fat; or for producing milk, wool, eggs, feathers, or particular qualities of these. The fundamental principle of this amelioration is the proper selection of parents. Two theories have obtained notice on this subject, the one in favor of breeding from individuals of the same parentage, called the *in-and-in* system, and the other in favor of breeding from individuals of two different offsprings, called the system of *cross breeding*. As is usual in such cases, neither theory is exclusively correct, at least as far as respects agricultural improvement; for, as will afterward appear, the principles on which a selection for breeding so as to improve the carcass of the animal depends, will lead occasionally to either mode.

That *the breed of animals is improved by the largest males*, is a very general opinion; but this opinion is the reverse of the truth, and has done considerable mischief. The great object of breeding, by whatever mode, is the improvement of form, and experience has proved that crossing has only succeeeded in an eminent degree, in those instances in which the females were larger than in the usual proportion of females to males; and that it has generally failed where the males were disproportionally large. (*Culley's Introduction*, &c.) The following epitome of the science of breeding, is by the late eminent surgeon, Henry Cline, who practised it extensively on his own farm at Southgate.

The external form of domestic animals has been much studied, and the proportions are well ascertained. But the external form is an indication only of internal structure. The principles of improving it must, therefore, be founded on a knowledge of the structure and use of internal parts.

The lungs are of the first importance. It is on their size and soundness that the strength and health of animals principally depend. The power of converting food into nourishment, is in proportion to their size. An animal with large lungs is capable of converting a given quantity of food into more nourishment than one with smaller lungs; and therefore has a greater aptitude to fatten.

The chest, according to its external form and size, indicates the size of the lungs. The form of the chest should approach to the figure of a cone, having its apex situated between the shoulders, and its base towards the loins. Its capacity depends on its form more than on the extent of its circumference; for where the girth is equal in two animals, one may have larger lungs than the other. A circle contains more than an ellipsis of equal circumference; and in proportion as the ellipsis deviates from the circle, it contains less. A deep chest, therefore, is not capacious; unless it is proportionably broad.

The pelvis is the cavity formed by the junction of the haunch bones with the bone of the rump. It is

essential that this cavity should be large in the female that she may be enabled to bring forth her young with less difficulty. When this cavity is small, the life of the mother and her offspring is endangered. The size of the pelvis is chiefly indicated by the width of the hips, and the breadth of the waist, which is the space between the thighs. The breadth of the loins is always in proportion to that of the chest and pelvis.

The head should be small, by which the birth is facilitated. Its smallness affords other advantages, and generally indicates that the animal is of a good breed. Horns are useless to domestic animals, and they are often a cause of accidents. It is not difficult to breed animals without them. The breeders of horned cattle and horned sheep, sustain a loss more extensive than they may conceive; for it is not the horns alone, but also much bone in the the skulls of such animals to support their horns, for which the butcher pays nothing; and besides this there is an additional quantity of ligament and muscle in the neck, which is of small value. The skull of a ram with its horns, weighed five times more than a skull which was hornless. Both these skulls were taken from sheep of the same age, each being four years old. The great difference in weight depended chiefly on the horns, for the lower jaws were nearly equal; one weighing seven ounces, and the other six ounces and three quarters, which proves that the natural size of the head was the same in both, independent of the horns and thickness of bone which supports them. In horned animals the skull is extremely thick. In a hornless animal it is much thinner, especially in that part where the horns usually grow. To those who have reflected on the subject, it may appear of little consequence whether sheep and cattle have horns; but on a moderate calculation it will be found, that the loss in farming stock, and also in the diminution of animal food, is very considerable, from the productions of horns and their appendages. A mode of breeding which would prevent the production of these, would afford a considerable profit in an increase of meat, wool, and other valuable parts.

The length of the neck should be proportioned to the height of the animal, that it may collect its food with ease.

The muscles, and the tendons which are their appendages, should be large; by which an animal is enabled to travel with greater facility.

The bones, when large, are commonly considered an indication of strength; but strength does not depend on the size of the bones, but that of the muscles. Many animals with large bones are weak, their muscles being small. Animals that have been imperfectly nourished during growth, have their bones disproportionately large. If such deficiency of nourishment originated from a constitutional defect, which is the most frequent cause, they remain weak during life. Large bones, therefore, generally indicate an imperfection in the organs of nutrition.

To obtain the most improved form, the two modes of breeding described as the in-and-in and crossing modes, have been practised. The first mode may be the better practice, when a particular variety approaches perfection in form; especially for those who may not be acquainted with the principles on which improvement depends. When the male is much larger than the female, the offspring is generally of an imperfect form. If the female be proportionately larger than the male, the offspring is of an improved form.

(*To be continued.*)

NEW YORK, FEBRUARY 28, 1829.

Castor Oil.

Judging from intelligence similar to the following, which frequently appears in the Southern papers, we are inclined to think the benefits of the Tariff will be realized more generally in the southern than in the northern sections of the Union. A writer in the Georgia Journal, thus expresses himself:—"I herewith forward you a specimen of home-made, or *Anti-Tariff Castor Oil*, manufactured by our friend Dr. D. A. Reese, of Monticello, which, you will perceive, is, in point of colour, odour, and purity, of the very best quality—I have administered it in my practice, and assure you, that I have found it to be equal, in all respects, to any that I have ever used. Dr. R. made about six hundred bottles last year, notwithstanding the dry weather was very fatal to the bean from which it is manufactured; and, having supplied himself with all the necessary machinery for expressing and clarifying it, he calculates to prepare it on a very large scale, if the seasons of the present year should be favourable to the growing of the bean. And, as he is now proposing to sell the article as cheap as it can be purchased in Augusta, (the freight, &c. included,) would it not be advisable and *commendable* in our medical friends, to encourage the projectors of such laudable enterprize?

"In every section of the Southern country, have the people expressed their determination to foster that praiseworthy spirit which looks to the production, at home, of all, or most of the articles of domestic consumption. What will all our spirited resolutions avail us, if we do not make a practical application of their principles by encouraging our pioneering friends in useful improvements!

Please shew the specimen of oil to your medical friends of Milledgeville, and you will confer a favour on our friend Dr. Reese, as well as on your most obedient servant and friend.

Edward A. Broddus."

Seed of the Trefoil Tree. Ptelia Trifoliata.

Mr. Andrew Parmentier, under date of the 2d instant, writes thus to the Editor of the American Farmer:—"This tree is a native of Virginia, very little known in this country, except in nurseries; its form is far from being disagreeable, and the leaves make a handsome contrast in landscape gardens by their dark colour, and where several of those trees are put together. But what I think gives it a great importance is, that it could be made an object of a branch of national industry and culture; for, after having given its greenish blossoms of no great appearance, it bears numerous clusters of seeds resembling hops, and which may be employed advantageously instead of them in the making of beer. In Alsace, in the eastern part of France, in a year when the hops were very dear, it was used very successfully, and the beer so made, was found very good. This tree grows very quick, and succeeds in bad soils; and in France it is estimated that an *hectare*, making nearly three acres, could produce 2400 francs, which is about 480 dollars.

"For this cultivation, it would be better to keep the trees bushy, and planted six feet apart each way. It is raised from seeds and layers, and may be planted to remain the third year. I have taken notice, that the aromatic taste of the seeds, is much stronger here than in France; so that the quantity of the weight would be less than that ordinarily used of the hops."

Improvement in Lamp Oil.—Those vegetable oils, which can be obtained sufficiently cheap for light, have not, heretofore, been used on account of their glutinous qualities, and the smoke produced in combustion. A recent discovery has been made in freeing it from its glutinous properties, so that it burns as free and clear from smoke and smell, as the best of lights now in use. Among the vegetable productions that may be profitably cultivated for this purpose, are the large white poppy, one bushel of seed yielding two gallons of oil; the American rape, producing fifty bushels of seed to the acre, and five quarts of oil per bushel; the sun-flower, growing about five feet high, and very abundant in seed and oil; and the cotton seed, vast quantities of which are known to be raised to the south, and hitherto of little value, but now, by this improvement, may be made to produce an income to the planter.

Albany Horticultural Society.

A correspondent writes, that the society is likely to receive the countenance and patronage of the most wealthy and respectable citizens of that place; and its members are flattering themselves with the hope, that the corporation of the city will consent to appropriate the ground of Washington Square for a Botanic and Horticultural Garden. This square comprises thirteen acres, and is beautifully situated on the height of ground, half a mile west of the river; and extends in a parallelogram from State to Lydeus streets. Should the anticipations of the members, in obtaining the ground, be realized, the results would, undoubtedly, be highly beneficial. not only to Albany and its vicinity, but to the State at large.

Exportation of Bones.

Some idea may be formed of the value placed on manures by English farmers, from the fact, that all kinds of bones, exported from this country to Great Britain, afford a great profit. We are not able, at present, to state the quantity that is exported, but presume it must be considerable, as they are brought from a distance up the North River, and shipped at this city.

There are bone mills in various parts of England, particularly in Derbyshire, where the farmers are distinguished for their intelligence and enterprise. These mills are "composed," says Loudon, "of ratchet-like iron wheels and rollers, between which the back-bones of horses, with their adhering ribs, pass with facility, and are crushed into small pieces."

New Mode of Bleaching.—Mr. John W. Cooper, of Waynesburgh, in Franklin county, Pennsylvania, has discovered (for which he has obtained patents) a new mode of bleaching and whitening of flax, hemp, tow, and cotton cloth, in the course of a few hours, without the least injury or damage to the strength thereof—and also, of making white paper from rags of cotton, linen or silk, be their colour ever so various, and of extracting from all kind of rags, all kinds of mineral colours, and rendering them white and completely bleached &c. The *ingredients* and *process* used, are said to be so cheap and trifling as to render these discoveries highly valuable, particularly to paper makers.

Query.—Mr. Editor,—During the fine sleighing we have lately had, I have been so fortunate as to get a wife, and with her a farm. One of the conditions of our union was, that I should leave this noisy city, and seek the enjoyments of rural life. One part of the farm is so sandy, it will produce nothing in dry weather; the other, so clayey, that not half a crop can be obtained in wet seasons. I have but little money.—Shall I expend it in purchasing manure, or in improving the texture of the soil?

Hops.—From the report of E. A. Le Breton, inspector of hops in Albany, made to the legislature, it appears that during 1828, he inspected 1,263 bales of hops, weighing 277,502 lbs., raised in the following counties; Madison, 151,268; Otsego, 18,467; Onondago, 16,962; Herkimer, 4,329; Columbia, 2,616; Monroe, 2,369; Franklin, 2,336; Oneida, 76,366; Saratoga, 990; Chenango, 925; Oswego, 347; Benington, Vt. 527. The amount of fees is $277,50. The

inspector says the raisers have done their work much better the present season, and the hops have gone into market a much better sample than for years back. The average price of hops has been about 9½ cts. per pound. This low price has partly been occasioned by the large quantity remaining in store, of the previous years' growth, and partly from the depression of the brewing business in this state. [*Alb. Adv.*

Bee Moths —The sagacity of man enables him to discover the peculiar habits, which instinct leads the subordinate creation to adopt for self preservation; and his inventive faculty frequently suggests to him some mode by which the distinctive habits of such as are noxious, may be conducive to their destruction. Thus we discover that instinct teaches the *Bee Moth* to secrete herself during the day, in the corners of the hive. All, therefore, necessary to be done, is to take such advantage of this fact as that this most pernicious enemy shall rush to its own destruction. For this purpose, let the orifice of the hive be four inches wide, and one inch high. At the commencement of the season for the moth, place a shingle on the bottom or floor of the hive You will find in the morning, that almost every moth has taken refuge under it. They are thus readily despatched This is the mode I have practised with my own bees, and not a single hive has ever been injured.—*N. E. Farmer.*

Sugar.—The cultivation of the cane is rapidly extending in Florida and Georgia. One proprietor, near the St. Mary's river, obtained last season 50 hhds. of first quality sugar, and 45 of molasses, from 45 acres of land. The *tariff* on these products amounted to 17 or 1800 dollars. at 3 cents per lb. and 10 cents per gallon. That proprietor, at least, will not complain of taxing the many for the benefit of a few! We shall soon have a full domestic supply of sugar, and are willing to leave its price to the domestic competition, not at all doubting that it will be lessened, as that of all other protected commodities has been.—*Savan. pap.*

Lapland Cows.—The cows in most parts of Lapland are all of the same white color, and very little larger than suckling calves in England; but exceedingly beautiful, and yielding milk of so superior a quality, that it becomes almost wholly cream, and that of the most delicious sweetness, while, when even fresh, it is so coagulated, that a spoon will nearly remain upright after it has been plunged into it.—*Imperial Magazine.*

Improvement in Candles.—I steep the common wick in lime water, in which I have dissolved a considerable quantity of common nitre or saltpetre. By this means I secure a purer flame and a superior light; a more perfect combustion is insured; snuffing is rendered nearly as superfluous as in wax candles, and the candles thus treated do not "*run.*" The wicks must be thoroughly dry before the tallow is put to them.

J. Murray, F. L. S.

To Select Apple Graftings.—Apples containing a large portion of saccharine matter, will make cider, that will preserve the longest. This property can be easily distinguished, by plunging them in a strong solution of salt and water; the poorest sort will keep nearest to the surface In this manner, graftings can be taken from the best sorts.

Large Lemon.—We have just been shown a lemon of uncommon size, raised on Mr. S. M'Cutchon's plantation at New Orleans. It measured 14 inches in circumference, taken between the stem and the opposite end of the fruit, and 14½ when measured lengthwise. About 20 others of the same size, produced on the the same tree, were sent to this city.—*N. Y. Evening Post.*

Average Price of Vegetables sold at Washington Market, for February 1829. [Corrected by William Curr, Gardener, for the N. Y. Farmer.]

Cauliflower—The supply of this article, smaller than last month; some however, were very fine, and sold from 12½ to 18¾ cents per head.—*Brocoli* very little in market, $1 to 1 50 per doz.—*Parsley* 4 cents per bunch.—*Lettuce*, plenty and good, from 37½ to 50 cents per doz.—*Leeks* 12½ cents per bunch.—*Corn-Sallad* not plentiful, 25 to 31¼ cents per half peck.—*Spinnage* scarce, 75 cents to $1 per bushel.—*Cabbage*, good 50 to 75 cents per doz.—*Savoys* from 37½ to 50 cents per doz.—*Beets*, plenty from 75 cents to 1 25 per hundred.—*Parsnips*, good from $1 to $1 25 per do.—*Carrots* from 75 cents, to $1 per do.—*Turnips*, 37½ to 44 cents per bushel.—*Salsify* from 6 to 10 cents per bunch of 12 roots.—*Horse Radish* at 3 to 4 cents per bunch.—*Potatoes* are as high as $1 per bushel.—*Onions*, $1 to 1 25 per bushel.

SONNET TO THE CAMELLIA JAPONICA.

BY W. ROSCOE, ESQ.

Say, what impels me, pure and spotless flower,
To view thee with a secret sympathy?
Is there some living spirit shrined in thee?
That, as thou bloom'st within my humble bower,
Endows thee with some strange, mysterious power.
Waking high thoughts? As there perchance might be
Some angel-form of truth and purity,
Whose hallowed presence shared my lonely hour?
Yes, lovely flower, 'tis not thy virgin glow,
Thy petals whiter than descending snow,
Nor all the charms thy velvet folds display;
'Tis the soft image of some beaming mind,
By grace adorn'd, by elegance refin'd,
That o'er my heart thus holds its silent sway.